

## PATENT ABSTRACTS OF JAPAN

(11)Publication number : 05-128912

(43)Date of publication of application : 25.05.1993

(51)Int.Cl.

H01B 3/00  
C08K 3/22  
C08K 9/02  
H05K 1/03

(21)Application number : 03-290244

(71)Applicant : MATSUSHITA ELECTRIC WORKS LTD  
FURUKAWA CO LTD

(22)Date of filing : 06.11.1991

(72)Inventor : HEIUCHI TAKAHIRO  
FUJIKI TOMOYUKI  
YAMAKAWA SEISHIRO  
UEMATSU TOSHIKATSU  
TAKAMOTO TAKAYOSHI  
SAITO KAZUO

## (54) COMPOSITE DIELECTRIC AND CIRCUIT BOARD

(57)Abstract:

PURPOSE: To provide composite dielectric and a circuit board having high dielectric constant and low dielectric loss by coating the surfaces of titanium oxide particles with inorganic hydroxide and/or inorganic oxide and dispersing the particles into resin. CONSTITUTION: Composite dielectric comprises 95 percentage by weight or more of rutile type titanium oxide particles in whole particles. The surface of titanium oxide is coated by at least one hydroxide or oxide out of Ti, Al, Si, Sn, Zn, Sb. The surface is coated by means of CVD or liquid phase processing method. The mean particle diameter is approximately 0.3-0.15 $\mu$ m, and the volume amount of inorganic coat is set in the range of  $1.0 \times 10^{-4}$ - $6.0 \times 10^{-3}$ cm<sup>3</sup>/g. These particles are dispersed into resin varnish. Dielectric having both high dielectric constant and low dielectric loss is obtained by way of this constitution.

## LEGAL STATUS

[Date of request for examination] 22.02.1994

[Date of sending the examiner's decision of rejection]

[Kind of final disposal of application other than the examiner's decision of rejection or application converted registration]

[Date of final disposal for application]

[Patent number] 2617639

[Date of registration] 11.03.1997

[Number of appeal against examiner's decision of rejection]

[Date of requesting appeal against examiner's decision of rejection]

[Date of extinction of right]

Copyright (C); 1998,2003 Japan Patent Office